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Notice of Allowability	Application No.	Applicant(s)	
	10/816,891	TANABE, KAZUHISA	
	Examiner	Art Unit	
	Karen E. Toth	3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the RCE filed 18 June 2007*.

2. ☒ The allowed claim(s) is/are *2-10*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

CHARLES A. MARMOR II
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to anticipate or make obvious the structure of claims 2-4, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates an Augmentation Index value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree.

Kawamura (US Patent 4561447) discloses a system that detects arterial pulse waves and corrects the waveform's amplitude based on weighting factors applied to the plurality of waveforms. Kawamura does not disclose calculating an Augmentation Index.

The prior art of record fails to anticipate or make obvious the structure of claim 5, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a

correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion is calculated by finding a ratio of pulse wave heights between the waveforms of the selected sensor element and a sensor element a predetermined distance away and during a phase other than the selected element's phase.

Kawamura determines the weighting factors by finding the waveform with the maximal amplitude, and applying positive and negative weights to the various waveforms to emphasize the maximal amplitude.

The prior art of record fails to anticipate or make obvious the structure of claim 6, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion unit normalizes the waveform from the selected element and the second element during a peak time phase, and calculates a ratio of the area under the curves as the distortion degree.

The prior art of record fails to anticipate or make obvious the structure of claim 7, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element

based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion unit normalizes the waveform from the selected element and the second element during a peak time phase, and then calculates the ratio of the time width of the waveforms when the selected sensor element crosses a threshold value as the distortion degree.

The prior art of record fails to anticipate or make obvious the structure of claim 8, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion is calculated as a ratio of area ratios of a waveform detected with the selected element before and after a time phase corresponding to a dicrotic notch in one beat to the same area ratios from the other sensor element as the distortion degree.

The prior art of record fails to anticipate or make obvious the structure of claim 9, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion unit normalizes the waveforms from the selected element and the distant element during the same period of a heart beat, and the calculates the ratio of maximum pulse wave height of the normalized waveforms as the difference in distortion degree.

The prior art of record fails to anticipate or make obvious the structure of claim 10, including, *inter-alia*, a device for measuring pulse waves comprising an arterial pulse wave sensor having a plurality of sensor elements, a unit to select a sensor element based on a detected sphygmographic waveform, a unit that calculates a characteristic value from the waveform, a unit to calculate the different in distortion degree of the waveforms detected by the plurality of elements based on waveforms from the selected element and an element a predetermined distance from the selected element, and a correction unit that corrects the amplitude of the waveform using the calculated difference in distortion degree, where the distortion degree is calculated as the ratio of

amplitudes between the selected sensor element waveform and the distant element waveform.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

2. Applicant's arguments, see the remarks and request for continued examination filed 18 June 2007, with respect to Kawamura have been fully considered and are persuasive. The objection of claims 1-10 has been withdrawn.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 2658505 to Sheer, which discloses a similar invention.

US Patent 5381797 to Pak, which discloses a similar invention.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen E. Toth whose telephone number is 571-272-6824. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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